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**MARTIAL ARTS TRAINING APPARATUS AND METHOD  
OF USING A MARTIAL ARTS TRAINING APPARATUS**

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# MARTIAL ARTS TRAINING APPARATUS AND METHOD OF USING A MARTIAL ARTS TRAINING APPRARTUS

## 5. BACKGROUND OF THE INVENTION

The present invention relates to a training apparatus and a method of using a training apparatus for martial arts training.

Practitioners of the martial arts use different training devices to increase the speed and accuracy of their punches and kicks. The practitioners typically strike devices such as heavy bags which are suspended from the ceiling; speed bags which are suspended between the ceiling and floor with elastic bands; or stationary objects such as boards or wooden poles. These training devices all have their uses, however, there are problems presented by each device.

A problem with items such as heavy bags and immovable objects such as boards and wooden poles is that the user may strike these objects with their hand or foot and injure themselves. Heavy bags are typically made of very tough leather and foam which for some users may not provide adequate shock absorption to protect their hands and feet. Heavy bags are typically very large targets that do not improve the accuracy of the user. For example, an item such as a heavy bag is a large bag approximately one foot to two feet in diameter and four to five feet high. The user can strike this bag at any place, however, since the bag is so large the accuracy of the user does not improve.

Another problem with typical training devices is that they may swing wildly in erratic directions after they are struck and injure the user. Typically, heavy bags are cylinder shaped and suspended from the ceiling or other similar structure. After the user hits the bag, the bag can violently swing in various directions and hit the user. In addition, the user will not be able to accurately strike the bag in the same area again to improve their accuracy due to this erratic movement.

Other prior art training devices such as speed bags, may have a ball or spherically shaped object that is attached to elastic band between a floor and a ceiling. These training devices allow the bag to return to its original position after being

struck. A disadvantage to these prior art devices is that they are not adjustable. For example, the speed bag only allows the user to only have one target to aim at and the speed or rate of return to the original position is not adjustable. The user can not have multiple bags or targets, since it would be very expensive and take up a large amount of room.

It would be desirable to provide a method and training apparatus which improves the user's accuracy, speed and power and allows the user to hit multiple targets.

It would also be desirable to provide a training apparatus which is adjustable and a method for using such an apparatus.

It is therefore desirable to create a method and a training apparatus addressing the shortcomings and disadvantages associated with the devices of the prior art.

### SUMMARY OF THE INVENTION

The present invention is a martial arts training method and apparatus. The apparatus includes a support structure and at least one resilient band attached to the support structure having a target suspended therefrom. The invention is also a method which includes punching or kicking a soft pliable target suspended from a resilient band attached at either end to a support structure such that the target returns to substantially its original position after being struck for subsequent punching and/or kicking.

The target can be made of a soft material so that it does not injure a user during kicking and punching drills. There can be multiple resilient bands and targets attached to the support structure at varying levels so that the user can add variety to their workout. Each of the resilient bands can have multiple targets attached to it so that the user can have different targets to hit on the same lateral plane. The resilient bands allow the target to return to its original position after being struck.

In a preferred embodiment, the support structure has four adjustable posts which can vary in height from four to eight feet high. Each vertical post is held in place and spaced a distance apart from each other using adjustable support rods. These four posts and support rods create a substantially square or rectangular

perimeter so that the user can stand in the interior portion created by the support structure. Each post has at least one point of attachment for securing the resilient band. An attachment device is positioned at the point of attachment. A hook bolt or other similar device can be used as the attachment device. The hook bolt can be  
5 selectively removable from the post. The points of attachment and attachment devices can be positioned along a longitudinal axis of the posts at varying heights.

The resilient bands can have a loop at each end to secure it to the attachment devices. The resilient bands can easily be detached from the attachment devices when needed. The resilient bands are pulled taught so that when the target is hit the  
10 resilient bands will return to their original position.

The target is attached to the resilient band at an attachment point. Multiple targets can be attached to the resilient band so that the user can have different targets in the lateral plane. The target is made of a soft material and can be a tennis ball or other spherically shaped object. The target is encased in a flexible pocket that is  
15 attached to the resilient band. The flexible pocket can be made with netting material or stocking material so that it completely surrounds the spherically shaped object.

The posts can have a two piece construction with a lower tube and a movable upper tube to form a telescoping arrangement. Connecting the upper and lower tubes is an intermediate tube positioned within the inner dimensions of the upper and lower  
20 tubes. The intermediate tube can be fixed to the lower tube and allows the upper tube to slidably move in a vertical direction. After the upper tube is correctly positioned on the intermediate tube, a locking device such as a locking pin arrangement can be used to hold the upper tube in place.

The present invention can be used in a four posted arrangement so that the  
25 user can stand in the interior portion. In addition, an alternative embodiment only two vertical posts may be used and attached to adjoining walls in a room with the resilient bands suspended therebetween. Alternatively, the two posts can be attached to a door frame and the resilient bands can be attached and removed as needed. An advantage to using the two post embodiment is that the user can obtain all the advantages of the  
30 four post embodiment without needing the space required for the four post embodiment.

As a result of the present invention, it is an advantage to have multiple targets suspended from various heights and on various lateral planes. It is an advantage of the present invention to provide adjustable targets that do not injure the user when they are hit.

5 For a better understanding of the present invention, together with other and further advantages, references made to the following detailed description, taken in conjunction with the accompanying drawings, and the scope of the invention will be pointed out in the appended claims.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

10 Figure 1 is a top perspective view of the first embodiment of the present invention;

Figure 2 is a cross sectional view of a post along lines 2-2 of Figure 1;

Figure 3 is a cross sectional view of a support rod along lines 3-3 of Figure 1;

15 Figure 4 is a cross sectional view of an attachment device along lines 4-4 of Figure 1;

Figure 5 is detailed view of a target of the present invention;

Figure 6 is a top perspective view of a second embodiment of the present invention;

20 Figure 7 is a cross sectional view along lines 7-7 of Figure 6 of a bracket of a present invention; and

Figure 8 is a top perspective view of a third embodiment of the present invention.

### **DETAILED DESCRIPTION OF THE INVENTION**

25 Referring to Figures 1-5, a martial arts training apparatus 10 is shown having a support structure 11 with a resilient band 40 and a target 50 suspended therefrom. The resilient band 40 is a continuous strip of material secured to the support structure 11 at attachment points 30 so that the resilient band 40 is held taught. A target 50 is secured at an attachment point 58 to the resilient band 40.

In a first embodiment, the support structure 11 has four posts 92, 94, 96 and 98 which are positioned in a substantially square or rectangular configuration. Posts 92, 94, 96 and 98 can be adjustable in height from four feet to eight feet using a telescoping arrangement. In a preferred embodiment, the posts 92, 94, 96 and 98 are made of metal, however, any rigid material can be used. For exemplary purposes, post 92 will be described in detail with the remaining posts 94, 96 and 98 being identical in construction.

Post 92 can have any cross-sectional shape but is shown here with a cylindrical shape. Post 92 is constructed with a lower cylinder 16 having a first inner dimension 20. The lower portion 16 has a base 24 that allows the post 92 to stand vertically on level ground. Post 92 also has an upper portion 14 which has a second inner dimension 21 identical in size to the first inner dimension 20. Connecting the upper portion 14 and lower portion 16 is an intermediate cylinder 18. The intermediate cylinder 18 has an outer dimension 22 sized to fit inside of the first inner dimension 20 and second inner dimension 21 of both the lower portion 16 and upper portion 14. The intermediate cylinder 18 allows for sliding movement of the upper portion 14 up and down on the intermediate portion 18. Intermediate cylinder 18 can be secured within the lower portion 16 to allow an exposed portion 17 of the intermediate section 18 to extend out of the lower portion 16. The exposed portion 17 of the intermediate cylinder 18 is then inserted into the upper portion 14. The upper portion 14 can slidably move up and down the intermediate cylinder 18 to extend the height of the post 92. A locking mechanism 26 to secure the upper portion 14 in place can be used once the upper portion 14 of the post 92 is correctly positioned.

Referring to Figure 2, the locking mechanism 26 that is selectively actuatable can be a pin 27 that is inserted through a hole 28 in the upper portion 14. The pin 27 then extends through a corresponding hole 29 in the exposed portion 17 of the intermediate cylinder 18 to hold the upper portion 14 in place. There can be multiple holes 29 along the longitudinal axis of the intermediate cylinder 18 so that various heights can be selected. However, it is envisioned that any locking mechanism can be used.

The post 92 also includes at least one point of attachment 30. An attachment device 32 is located at the point of attachment 30. The attachment device 32 allows the resilient band 40 to be secured to the post 92. It is envisioned that there are multiple points of attachment 30 positioned along the longitudinal axis of the post 92. The attachment device 32 can be an hook bolt 34. See Figure 4. The hook bolt 34 extends through an aperture 38 in the side wall 39 of the upper portion 14 of post 92. There can be multiple apertures 38 along the upper portion 14 and the lower portion 16 as desired. The hook bolt 34 extends through the aperture 38 and is secured on the opposite side by a nut 36.

Referring to Figures 1 and 3, support rods 60 can be used to hold the posts 92, 94, 96 and 98 a distance away from each other. The support rods 60 can be extended from a length of four feet to eight feet. By adjusting the length of the support rods 60, the interior dimensions of the space created by the posts 92, 94, 96 and 98 where the user stands can be adjusted as needed depending on the height of the user and their particular needs. The support rods 60 can be made of metal or rigid plastic or any other stiff material.

The support rods 60 can be constructed of telescoping tubes as shown in Figure 3. A first tube 66 and a second tube 68 can have identical first inner dimensions 72. A third tube 70 has a second outer dimension 74 which is smaller than the first dimension 72 and is positioned inside of the first tube 66 and the second tube 68. The third tube 70 is adjustably secured to both the first tube 66 and second tube 68. In order to adjust the length of the support rod 60 both the first tube 66 and second tube 68 have apertures 76 extending through their outer surface. Corresponding apertures 77 are spaced along the length of the third tube 70. The user aligns the apertures 76 of the first tube 66 and second tube 68 along the length of the third tube 70 with apertures 77. After these apertures 76 and 77 are aligned, bolts 78 extend through the first tube 66 and the third tube 70 to hold the first tube 66 in place. The user then slidably adjusts the distance from the first tube 66 to the second tube 68 and uses an additional bolt 78 to fix the position of the second tube 68 along the length of the third tube 70. The support rod 60 has a first end 62 and a second opposite end 64. For exemplary purposes, the first end 62 is attached to the first post 92 and the second end 64 is attached to the second post 94. The support rods 60 can

be attached to both the top portion 14 and the bottom portion 16 of the posts 92, 94, 96 and 98 in a parallel relation to each other to securely hold the posts in place.

Resilient bands 40 extend horizontally between each of the posts 92, 94, 96 and 98. Each resilient band 40 can be made of an elastic material such as surgical tubing. It is envisioned that multiple resilient bands 40 can be attached between the posts 92, 94, 96 and 98. However, for exemplary purposes only one resilient band 40 will be described. The resilient band 40 has a first end 42 attached to first post 92 and a second opposite end 43 attached to second post 94. The first end 42 and the second end 43 are attached to the posts 92, 94, 96 and 98 with the attachment device 32.

Each end has a loop 44 which is inserted through the hook bolt 34. The resilient band 40 can be easily removed by the user when needed by either unbolting the hook bolt 34 from the post or undoing the loop 44 of the resilient band 40. The resilient band 40 can be attached with different tensions so that the target 50 moves back to its original position after being struck at a faster rate or slower rate.

Referring to Figure 5, attached to the resilient band 40 is a target 50. The target 50 can be made of a soft material so that it does not injure a person's hands or feet or any other part of their body when hit. In a preferred embodiment, the target 50 has a spherical shape. A tennis ball or other type of soft spherical object or ball 52 can be used as the target 50. The ball 52 is held in a pocket 54. The pocket 54 made of a netting material 56. The netting material can be made of a rope material or stocking material which is flexible and pliable. The ball 52 is inserted inside the pocket 54 created by the netting 56 and the netting 56 is secured at an attachment point 58 on the resilient band 40. The attachment point 58 can be moved anywhere along the length of the resilient band 40 so that the user can change the position of the target 50. The attachment point 58 can be easily moved by the user by simply sliding the netting 56 along the length of the resilient band 40 between the first end 42 and the second end 43.

In a second embodiment, the apparatus 200 can also be used with only two posts 92 and 94 instead of the four posts as shown in Figures 1-5. Shown in Figures 6 and 7 only one side of the apparatus 10 is used. The first post 92 and the second post 94 are identical as shown in the first embodiment. The points of attachment 30, the



resilient band 40 and the target 50 are all identical to the first embodiment. However, no support rods 60 are used. Instead, the posts 92 and 94 are attached to a first wall 202 and a second wall 204. These walls 202 and 204 can be adjoining walls as in a corner of a room or opposite parallel walls of a room.

5           For exemplary purposes, the walls 202 and 204 form a corner of a room. The posts 92 and 94 are secured to the first wall 202 and second wall 204 using brackets 206. The brackets 206 can be made of a metallic material or any other rigid material that will securely hold the posts 92 and 94 in place. The bracket 206 has a U-shaped portion 208 with a first end 210 and a second end 212. Extending substantially  
10           perpendicularly from the first and second ends 210 and 212 are tabs 216. Tabs 216 have bolt holes 214 therein. In order to secure the first post 92 and second post 94 to the first wall 202 and second wall 204, the U-shaped portion 208 of the bracket 206 is placed over the posts 92 and 94. At least one bracket 206 is used, however, several brackets 206 can be used if needed to securely hold the posts 92 and 94 to the walls.  
15           The tabs 216 are then placed adjacent the surface of the first wall 202 or second wall 204. Bolts 218 are inserted through the bolt holes 214 and driven into the walls. The bolts 218 can be self tapping screws, lag bolts or any other fastener.

          It is also envisioned that the second embodiment 200 can be used inside a door frame. Referring to Figure 8, the second embodiment 200 is used within a door frame  
20           220. The door frame 220 has a first frame member 222 and a parallel second frame member 224. The posts 92 and 94 are attached to the first frame member 222 and second frame member 224, respectively. The brackets 206, as in the previous embodiment, are used to hold the posts 92 and 94 to the door frame 220. The user places the poles 92 and 94 adjacent the door frame 220 and uses the brackets 206 and  
25           bolts 218 to hold the brackets to the door frame 220. When the device 200 is used, the resilient bands 40 and targets 50 can be secured to the attachment devices 32. After the user is finished using the device 200 the resilient bands 40 can be easily removed from the attachment devices 32 so that the user can walk through the door frame 220 and use the door as normal.

30           An advantage of the second embodiment 200 is that less room is taken up by the two post embodiment than the four post embodiment. Therefore, a user can still

have all the advantages of having the target 50 that it is suspended from a resilient band 40 without having to take up the space required by the four post embodiment described earlier.

5 In order to use the first embodiment of the present invention, the user first adjusts the height of the posts 92, 94, 96 and 98 to the desired height between four and eight feet. The upper portion 14 is raised or lowered as needed and the locking mechanism 26 is actuated. The support rods 60 are adjusted to their appropriate length to space the posts 92, 94, 96 and 98 apart from each other so that the user can move freely about the interior portion created by the four posts 92, 94, 96 and 98.  
10 The user can then hit any of the targets attached to the resilient bands 40. The resilient bands 40 can be at varying levels along the length of the posts 92, 94, 96 and 98 so that the user can strike high and low targets 50 as needed. The user can then adjust the targets 50 along the lengths of the resilient band 40 so that their punches and kicks can be directed at different points in a lateral plane to further increase their  
15 accuracy and quickness.

In order to use the second embodiment and third embodiment, the user only has to attach the desired number resilient bands 40 to the first post 92 and second post 94. It is envisioned that multiple targets 50 can be suspended from a single band so that the user can have multiple targets to hit on the same lateral plane to further  
20 increase their accuracy and add variety to their workout.

An advantage of the present invention is that it can be easily adapted for use in both larger spaces and smaller spaces for use by a single user or multiple users.

A still further advantage of the present invention is that the targets can be placed in various positions so that the user can have a variety of targets to hit and will  
25 constantly have to adjust their aim and accuracy thereby increasing their skill level.

Therefore, while there have been described to have presently believed be preferred embodiments of the present invention, those skilled in the art will realize that other and further changes and modifications can be made thereto without departing from the scope of the invention, and it is intended to claim all such changes  
30 and modifications as fall within the scope of the invention.